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EXAMINER
THANGAVELU, KANDASAMY

ART UNIT	PAPER NUMBER
2123	

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Please find below and/or attached an Office communication concerning this application or proceeding.

		Application No.	Applicant(s)
Office Action Summary		10/647,769	KELLER ET AL.
		Examiner	Art Unit
		Kandasamy Thangavelu	2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>25 August 2003</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-20</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,2,4,5,7,8,10-14 and 16-19</u> is/are rejected.

7)☒ Claim(s) <u>3,6,9,15 and 20</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>25 August 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-SB/08)
    Paper No(s)/Mail Date <u>2/6/04, 1/20/05, 6/8/05</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☒ Other: <u>1449 of 12/1/05, 1/17/06</u>.

DETAILED ACTION

1.   Claims 1-20 of the application have been examined.

Information Disclosure Statement

2.   Acknowledgment is made of the information disclosure statements filed on February 6, 2004, January 20, 2005, June 8, 2005, December 12, 2005 and January 17, 2006 together with a list of the patents and copies of papers. The patents and papers have been considered.

Drawings

3.   The drawings submitted on August 25, 2003 are accepted.

Claim Objections

4.   The following is a quotation of 37 C.F.R § 1.75 (d)(1):

> The claim or claims must conform to the invention as set forth in the remainder of the specification and terms and phrases in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.

5.   Claim 7 is objected to because of the following informalities:

Claim 7, Line 13, "responsive to comparison of a difference" appears to be incorrect

and it appears that it should be "responsive to detection of a difference". Appropriate

correction is required.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

7.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

8.   Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Matsumura et al. (U.S. Patent 6,370,675) in view of **Beardslee et al.** (U.S. Patent 7,072,818),

and further in view of **Duffield et al.** (U.S. Patent 5,617,146) and **Tanaka et al.** (U.S. Patent

6,115,034).

8.1   **Matsumura et al.** teaches semiconductor integrated circuit design and evaluation system

using cycle based timing. Specifically, as per claim 1, **Matsumura et al.** teaches a method for

establishing consistency, with respect to a data model, between sub-modules within an E-CAD

tool (Abstract, L1-5, L8-11 and L14-21; CL1, L20-25), comprising the steps of:

    creating a consistency database including at least one consistency indicator for each block

of interest in the data model (Fig. 1; Item 10_2, timing data; Abstract, L14-21);

    comparing at least one data field value corresponding to the consistency indicator, for

each block of interest, in source files against a corresponding consistency indicator in the

consistency database (Fig. 1; Item 10_2, timing data; Abstract, L14-21; CL4, 29-43).

    Matsumura et al. does not expressly teach executing one of the sub-modules to perform

an analysis of a current version of the data model; and comparing at least one data field value

corresponding to the consistency indicator, for each block of interest, in source files in the

current version of the data model being analyzed, against a corresponding consistency indicator in

the consistency database. **Beardslee et al.** teaches executing one of the sub-modules to perform

an analysis of a current version of the data model; and comparing at least one data field value

corresponding to the consistency indicator, for each block of interest, in source files in the

current version of the data model being analyzed, against a corresponding consistency indicator in

the consistency database (Abstract, L1-5; CL40, L40-49). It would have been obvious to one of

ordinary skill in the art at the time of Applicant's invention to modify the method of **Matsumura**

et al. with the method of **Beardslee et al.** that included executing one of the sub-modules to

perform an analysis of a current version of the data model; and comparing at least one data field

value corresponding to the consistency indicator, for each block of interest, in source files in the current version of the data model being analyzed, against a corresponding consistency indicator in the consistency database, because that would allow analysis, diagnosis and debugging of fabricated hardware designs at hardware description language at speed (Abstract, L3-5 and L8-11).

Matsumura et al. and **Beardslee et al.** do not expressly teach issuing a warning indicating a possible discrepancy between data in the current version of the data model and corresponding data in a previous version of the data model, in response to detecting a difference between the at least one data field value in the current version of the data model being analyzed and the corresponding consistency indicator. **Duffield et al.** teaches issuing a warning indicating a possible discrepancy between data, in response to detecting a difference between the at least one data field value and the corresponding consistency indicator (Abstract, L6-11; CL2, L18-24; CL8, L44-50). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the method of **Matsumura et al.** and **Beardslee et al.** with the method of **Duffield et al.** that included issuing a warning indicating a possible discrepancy between data, in response to detecting a difference between the at least one data field value and the corresponding consistency indicator, because that would prevent modification of a second data when the difference in data is outside a range (CL2, L18-24).

Matsumura et al., Beardslee et al. and **Duffield et al.** do not expressly teach data in the current version of the data model and corresponding data in a previous the version of the data model, and detecting the at least one data field value in the current version of the data model being analyzed. **Tanaka et al.** teaches data in the current version of the data model and

corresponding data in a previous the version of the data model, and detecting the at least one data

field value in the current version of the data model being analyzed (CL12, L43-53). It would

have been obvious to one of ordinary skill in the art at the time of Applicant's invention to

modify the method of **Matsumura et al., Beardslee et al.** and **Duffield et al.** with the method of

Tanaka et al. that included data in the current version of the data model and corresponding data in

a previous the version of the data model, and detecting the at least one data field value in the

current version of the data model being analyzed, because that would enable sharing of data

relating to design between devices realizing cooperative work by a plurality of designers (CL3,

L3-7).

Per claim 4: **Matsumura et al.** teaches that a plurality of the sub-modules are

simultaneously operational (Abstract, L1-5, L8-11 and L14-21; CL1, L20-25).

9.   Claims 7, 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Matsumura et al. (U.S. Patent 6,370,675) in view of **Duffield et al.** (U.S. Patent 5,617,146) and

further in view of **Tanaka et al.** (U.S. Patent 6,115,034).

9.1   As per claim 7, **Matsumura et al.** teaches a system for establishing consistency, with

respect to a data model, between sub-modules within an E-CAD tool (Abstract, L1-5, L8-11 and

L14-21; CL1, L20-25), comprising a processor;

        a consistency database, accessible by the processor, for storing consistency information

for each block of interest in the data mod (Fig. 1; Item 10_2, timing data; Abstract, L14-21);

a comparison module, capable of accessing the consistency database and executable via

the processor, for comparing at least one data field value, corresponding to the consistency

information, against corresponding consistency information in the consistency database (Fig. 1; Item

10_2, timing data; Abstract, L14-21; CL4, 29-43).

Matsumura et al. does not expressly teach an interface module, responsive to comparison

of a difference between the data field value in a current version of the data model being analyzed and a

corresponding consistency information, for issuing a warning indicating a possible discrepancy

between data in the current version of the data model and corresponding data in a previous version of

the data model. **Duffield et al.** teaches an interface module, responsive to comparison of a difference

between the data field value and a corresponding consistency information, for issuing a warning

indicating a possible discrepancy between data in the data model and corresponding data in a previous

data model (Abstract, L6-11; CL2, L18-24; CL8, L44-50).

Matsumura et al. and **Duffield et al.** do not expressly teach the data field value in a

current version of the data model being analyzed, detecting data in the current version of the data model

and corresponding data in a previous version of the data model. **Tanaka et al.** teaches the data field

value in a current version of the data model being analyzed, detecting data in the current version of the

data model and corresponding data in a previous version of the data model (CL12, L43-53).

Per claim 10: **Matsumura et al.** teaches that the comparison module is functionally

integrated into each of a plurality of the sub-modules (Fig. 1; Item 10_2, timing data; Abstract, L14-21;

CL4, 29-43).

Per claim 11: **Matsumura et al.** teaches that a plurality of the sub-modules are simultaneously operational (Abstract, L1-5, L8-11 and L14-21; CL1, L20-25).

Per claim 12: **Matsumura et al.** teaches that the comparison module is functionally independent of each of the sub-modules (Fig. 1; Item 10_2, timing data; Abstract, L14-21; CL4, 29-43).

10.   Claims 2, 5, 13, 14, 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Matsumura et al.** (U.S. Patent 6,370,675) in view of **Beardslee et al.** (U.S. Patent 7,072,818), **Duffield et al.** (U.S. Patent 5,617,146) and **Tanaka et al.** (U.S. Patent 6,115,034), and further in view of **Sample et al.** (U.S. Patent 6,377,912) and **Ho et al.** (U.S. Patent 6,009,251).

10.1   As per claim 2, **Matsumura et al., Beardslee et al., Duffield et al.** and **Tanaka et al.** teach the method of claim 1. **Matsumura et al., Beardslee et al., Duffield et al.** and **Tanaka et al.** do not expressly teach the consistency indicator comprises timestamp information indicating a time of creation of one of the source files. **Sample et al.** teaches the consistency indicator comprises timestamp information (CL25, L34-36; CL25, L25-29; CL26, L24-30). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the method of **Matsumura et al., Beardslee et al., Duffield et al.** and **Tanaka et al.** with the method of **Sample et al.** that included the consistency indicator comprises timestamp information, because that would allow discarding the data value based on the timestamp value of the data (CL26, L27-30).

Matsumura et al., Beardslee et al., Duffield et al., Tanaka et al. and **Sample et al.** do

not expressly teach timestamp information indicating a time of creation of one of the source files.

Ho et al. teaches timestamp information indicating a time of creation of one of the source files

(CL13, L9-25). It would have been obvious to one of ordinary skill in the art at the time of

Applicant's invention to modify the method of **Matsumura et al., Beardslee et al., Duffield et**

al., Tanaka et al. and **Sample et al.** with the method of **Ho et al.** that included timestamp

information indicating a time of creation of one of the source files, because that would allow

accessing the data in the new database and the history database to generate tree information

based on the time of creation of one of the source files (CL10, L50-54).

10.2   As per claim 13, **Matsumura et al.** teaches a system for establishing consistency, with

respect to a data model, between sub-modules within an E-CAD tool (Abstract, L1-5, L8-11 and L14-

21; CL1, L20-25), comprising:

    means for creating a consistency database including at least one consistency indicator for each

block of interest in the data model (Fig. 1; Item 10_2, timing data; Abstract, L14-21);

    means for comparing a data field value corresponding to the consistency indicator, for

each block of interest, in source files against a corresponding consistency indicator in the

consistency database (Fig. 1; Item 10_2, timing data; Abstract, L14-21; CL4, 29-43).

    Matsumura et al. does not expressly teach means for executing one of the sub-modules to

perform an analysis of a current version of the data model; and means for comparing a data field

value corresponding to the consistency indicator, for each block of interest, in source files in the

current version of the data model being analyzed, against a corresponding consistency indicator in

the consistency database. **Beardslee et al.** teaches means for executing one of the sub-modules to

perform an analysis of a current version of the data model; and means for comparing a data field

value corresponding to the consistency indicator, for each block of interest, in source files in the

current version of the data model being analyzed, against a corresponding consistency indicator in

the consistency database (Abstract, L1-5; CL40, L40-49).

   Matsumura et al. and **Beardslee et al.** do not expressly teach the consistency indicator

comprises timestamp information indicating at least one of a time of creation and a time of

modification of one of the source files. **Sample et al.** teaches the consistency indicator comprises

timestamp information (CL25, L34-36; CL25, L25-29; CL26, L24-30).

   Matsumura et al., Beardslee et al. and **Sample et al.** do not expressly teach timestamp

information indicating at least one of a time of creation and a time of modification of one of the

source files. **Ho et al.** teaches timestamp information indicating at least one of a time of creation

and a time of modification of one of the source files (CL13, L9-25).

   Matsumura et al. Beardslee et al., Sample et al. and **Ho et al.** do not expressly teach

means for issuing a warning indicating a possible discrepancy between data in the current version

of the data model and corresponding data in a previous version of the data model, in response to

detecting a difference between the data field value in the current version of the data model being

analyzed and the corresponding consistency indicator. **Duffield et al.** teaches means for issuing a

warning indicating a possible discrepancy between data, in response to detecting a difference

between the data field value and the corresponding consistency indicator (Abstract, L6-11; CL2,

L18-24; CL8, L44-50).

Matsumura et al. Beardslee et al., Sample et al., Ho et al. and Duffield et al. do not

expressly teach data in the version of the data model and corresponding data in a previous version

of the data model, and detecting the data field value in the current version of the data model

being analyzed. **Tanaka et al.** teaches data in the version of the data model and corresponding

data in a previous version of the data model, and detecting the data field value in the current

version of the data model being analyzed (CL12, L43-53).

10.3   As per claim 14, **Matsumura et al., Beardslee et al., Sample et al., Ho et al., Duffield**

et al. and **Tanaka et al.** teach the system of claim 13. **Matsumura et al., Beardslee et al.,**

Duffield et al. and **Tanaka et al.** do not expressly teach the timestamp information indicates

both a time of creation and a time of modification of one of the source files. **Sample et al.**

teaches the timestamp information (CL25, L34-36; CL25, L25-29; CL26, L24-30).

Matsumura et al., Beardslee et al., Duffield et al., Tanaka et al. and **Sample et al.** do

not expressly teach the timestamp information indicates both a time of creation and a time of

modification of one of the source files. **Ho et al.** teaches the timestamp information indicates

both a time of creation and a time of modification of one of the source files (CL13, L9-25).

Per claim 16: **Matsumura et al. Beardslee et al., Sample et al.** and **Ho et al.** do not

expressly teach that the means for issuing a warning is functionally integrated into each of a

plurality of the sub-modules. **Duffield et al.** teaches that the means for issuing a warning is

functionally integrated into each of a plurality of the sub-modules (Abstract, L6-11; CL2, L18-24;

CL8, L44-50).

Per claim 17: **Matsumura et al.** teaches that a plurality of the sub-modules are

simultaneously operational (Abstract, L1-5, L8-11 and L14-21; CL1, L20-25).

10.4   As per Claim 5, it is rejected based on the same reasoning as Claim 13, <u>supra.</u> Claim 5 is

a method claim reciting the same limitations as Claim13, as taught throughout by **Matsumura et**

al., Beardslee et al., Sample et al., Ho et al., Duffield et al. and **Tanaka et al.**

10.5   As per Claims 18 and 19, these are rejected based on the same reasoning as Claims13 and

14, <u>supra.</u> Claims 18 and 19 are software product claims reciting the same limitations as

Claims13 and 14, as taught throughout by **Matsumura et al., Beardslee et al., Sample et al.,**

Ho et al., Duffield et al. and **Tanaka et al.**

11.   Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Matsumura et al.**

(U.S. Patent 6,370,675) in view of **Duffield et al.** (U.S. Patent 5,617,146) and **Tanaka et al.**

(U.S. Patent 6,115,034), and further in view of **Sample et al.** (U.S. Patent 6,377,912) and **Ho et**

al. (U.S. Patent 6,009,251).

11.1   As per claim 8, **Matsumura et al., Duffield et al.** and **Tanaka et al.** teach the method of

claim 1. **Matsumura et al., Duffield et al.** and **Tanaka et al.** do not expressly teach the

consistency indicator comprises timestamp information indicating a time of modification of one of

the source files. **Sample et al.** teaches the consistency indicator comprises timestamp information (CL25, L34-36; CL25, L25-29; CL26, L24-30).

Matsumura et al., Duffield et al., Tanaka et al. and **Sample et al.** do not expressly teach timestamp information indicating a time of modification of one of the source files. **Ho et al.** teaches timestamp information indicating a time of modification of one of the source files (CL13, L9-25).

Allowable Subject Matter

12.   Claims 3, 6, 9, 15 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

13.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is 571-272-3717. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez, can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

K. Thangavelu
Art Unit 2123
August 31, 2006